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# **The development and testing of PSYCHLOPS KIDS: a new child-centred outcome measure**

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## **Abstract**

**Background:** There are currently no client generated measures able to capture a child's perspective of the value of generic therapeutic mental health interventions. We have developed a new measure called 'PSYCHLOPS Kids'. It measures areas of individual importance to the respondent and contains both quantitative and qualitative elements. We aimed to pilot this new outcome measure and determine its psychometric properties.

**Methods:** PSYCHLOPS Kids was adapted from the adult PSYCHLOPS questionnaire, a validated and reliable client-generated measure used in primary care mental health. Development of PSYCHLOPS Kids involved an expert group, pilot testing with dramatherapists followed by psychometric testing with children receiving dramatherapy aged 7-13 years.

**Results:** 132 children completed pre- and post-intervention questionnaires. Mean initial PSYCHLOPS Kids scores (scale of 0-12) were 4.98 (SD 3.42); mean post-therapy, 3.24 (SD 3.03); mean effect size of change, 0.51. The Strengths and Difficulties Questionnaire (SDQ) was used as a comparator instrument completed by parent/carers of 32 children; mean effect size, 0.39. The effect size difference between both instruments was not significant ( $t = 1.05$ ;  $P = 0.30$ ); the PSYCHLOPS Kids Problem domain effect size (mean, 0.68) was significantly greater than for the SDQ ( $t = 2.06$ ;  $P = 0.04$ ). Concurrent validity was demonstrated by strong predictive power of change scores for the self-assessment of change item in PSYCHLOPS Kids;

therapist-assessment of change was not a significant predictor of change scores.

PSYCHLOPS Kids and SDQ change scores were not significantly correlated.

**Conclusions:** PSYCHLOPS Kids is the first client generated mental health outcome measure focussing on problems for generic use in children. It has demonstrated moderate responsiveness to change and satisfactory testing for measured aspects of validity and reliability. PSYCHLOPS Kids now requires further validity, reliability and qualitative testing.

### **Key Practitioner Message:**

- There are currently no client-generated, problem based mental outcome measures available for use with children
- Client generated outcome measures only measure items defined by children themselves
- In contrast, most outcome measures used with children are standardised, capturing responses to a series of pre-determined questions
- We have developed a client-generated, problem-based measure called 'PSYCHLOPS Kids', based on a previously validated adult measure, 'PSYCHLOPS'.
- We describe eight stages of piloting followed by validation testing.
- PSYCHLOPS Kids demonstrated higher responsiveness to change when compared with a standardised measure.
- Validity and reliability testing were satisfactory.

### **Introduction**

There is a lack of robust client-centred psychological evaluation in therapeutic work with children. Most outcome measures used with children are standardised measures which capture the child's or parent/carer's response to a series of pre-determined questions (Goodman, 2001; Gowers et al., 1999). We wanted to shift the focus to obtain the more client-centred perspective on outcomes provided by a client generated measure. Client generated measures score items defined by clients themselves, either in terms of problems or recovery goals (Higginson & Carr, 2001). Client generated outcome instruments for use with children have been developed for specific therapeutic situations such as autism (Kirk & Dutton, 2006). Assessment of therapy-based goals has been pioneered through use of the Global Assessment Scale (GAS) in a variety of paediatric settings (King et al., 2009). However, there are

currently no generic, client generated, problem based measures available for use with children.

We planned to develop a client generated, self-complete measure for use with children. We therefore decided to adapt one of the most commonly used adult client generated measures, PSYCHLOPS (Psychological Outcome Profiles) (Ashworth et al., 2004). It has been validated for use in adult mental health interventions in primary care, community and secondary care mental health settings (Ashworth et al., 2004; Hedinssohn et al., 2013; Kelly, 2010). PSYCHLOPS is included in the list of mental health outcome measures approved by the UK Department of Health (National Institute of Mental Health in England, 2008). More recently, PSYCHLOPS has been used in World Health Organisation (WHO) trials to evaluate mental health interventions provided by trained lay health workers in conflict zones in developing countries (Rahman et al., 2016). Unlike standardised measures, a client generated instrument contains qualitative data; scoring of qualitative data provides quantitative data outputs with the main focus being on individual change scores. Comparison of client generated baseline scores is not standardised against population norms (since each client is scoring individualised items); change scores represent the change in individualised items rather than standardised items (Lacasse et al., 1999). The aim of developing a new measure was to remain aligned to the original concept of PSYCHLOPS by including both the child's perspective (recorded as qualitative data) while measuring outcome scores (quantitative data).

Adult PSYCHLOPS is a brief, self-administered questionnaire designed to capture the client's own perspective of their psychological distress (Ashworth et al., 2005). It asks clients to describe and score the problem that troubles them the most at the start of therapy, then to describe and score any limitations (functional impairment) arising as a consequence of these problems. Scores are elicited using Likert scales; responses are collected on a rating scale with six anchors ranging from "0 - Not at all affected" to "5 – severely affected". Clients score these same items at intervals throughout the process of therapy, and at completion. If new problems arise during the course of therapy, these too are described and scored. Client generated measures are characteristically more sensitive to change than conventional, check-list type questionnaires because they tap into issues of importance to the client, rather than merely offering a series of items, many of which may lack meaning or relevance to the individual (Lacasse et al., 1999; Ashworth et al., 2004; Elliott et al., 2016).

Adult PSYCHLOPS was designed by a group of mental health practitioners and general practitioners (Ashworth et al, 2004), with user involvement from Depression Alliance, a UK charity for people affected by depression. Drafting involved consultation with the Plain English Campaign and finally the Crystal Mark award based on readability. Therapist feedback following use of this measure has been positive (Ashworth et al 2005) and contributed to subsequent versions of PSYCHLOPS.

Creating reliable and valid assessments is increasingly important and has been neglected in terms of client generated measures for children and young people. It

was essential to involve key stakeholders in this process, as this had proved successful when developing adult PSYCHLOPS. Our aim was to create a new version of PSYCHLOPS which could be used with children and then to pilot the questionnaire in a therapeutic setting.

## **Methods**

### *Setting for development and piloting of PSYCHLOPS Kids*

We collaborated with Roundabout, a UK charity which provides dramatherapy for children within a psychological and educational context

([www.roundaboutdramatherapy.org.uk](http://www.roundaboutdramatherapy.org.uk)). Roundabout has a large team of Health and Care Professions Council (HCPC) registered dramatherapists working in over 50 projects with a range of service users of all ages. Dramatherapy is a type of psychological therapy in which performance arts are utilised within the therapeutic relationship and where drama processes are used to achieve therapeutic goals.

Roundabout offers dramatherapy for children with a wide range of distress and disadvantage. Service users are termed 'clients' rather than 'patients', and we have used this term throughout since this reflects the context of piloting. Dramatherapists working with Roundabout contributed to a programme of development of a new client generated outcome measure which we termed, 'PSYCHLOPS Kids'.

### *The development of PSYCHLOPS Kids*

We adapted adult PSYCHLOPS so that it was suitable for use with children aged 7-13 years. We formed an expert group, basing our decisions on adapting the adult instrument from our own professional experience of working with children with



mental health problems. The expert group consisted of qualified dramatherapists, clinical psychologists and primary healthcare professionals.

The most radical change to the appearance of the original instrument was to replace the Likert scales with Emoticon faces, a series of graded visual images ranging from a smile to a frown. Feedback on the experience of attending therapy was elicited using thumbs-up, neutral and thumbs-down signs.

The second change was to give children much more space in the body of the questionnaire to express their responses in text and/or creatively using art work. The wording was amended accordingly, inviting the child to write their response and also to add 'comments/drawing/doodles' in a space on the final page.

The third change was to revise the wording. Although approved by the Plain English Campaign, the original wording was not 'child-friendly'. A key change was to substitute the word 'worried' for 'troubles' (Question 1 originally stated: 'What is the problem that troubles you most?'). This change was in response to concern that children appeared to associate trouble with being "in trouble". The revised question was amended to read, "What are you most worried about in your life at the moment?".

The fourth change was to remove the question about the second problem. In adult PSYCHLOPS, the client is asked about the two problems of greatest concern. The

expert group considered that asking about a second problem had the potential to confuse children and so we removed it.

The fifth change was to add in a question about goals. The expert group considered current literature on the broad classification of problem domains and goal attainment domains as components of client generated outcome measures (Wolpert et al., 2012). Roundabout had already included a focus on eliciting problems as part of service evaluation and of goals as part of therapist feedback. We aimed to build on existing practice by developing a more formalised instrument both to score problems to contribute to outcome measurement and capture qualitative data about goals, thus broadening the focus of PSYCHLOPS. This resulted in the addition of the question, 'If you had three wishes to help you, what would they be?'. Responses to this question were used for therapist feedback and did not contribute to change scores.

The sixth change was to the post-therapy questionnaire in which we wanted to include a question asking about reflections on the therapy, after completion, which could enable a contrast with pre-therapy views.

A seventh change was introduced by the dramatherapists (see below) who advised that the number of Emoticon faces be reduced from six to five in order to clearly differentiate between facial expressions using this format.

Finally, minor amendments were made to the wording to accommodate therapist-supported completion. Although adult PSYCHLOPS is characterised by its feature of self-completion, the therapists were clear that this would not always be feasible for children in our target age range. PSYCHLOPS Kids therefore offers both completion options.

These eight changes required a change to the scoring system. Adult PSYCHLOPS has a scoring system of four, 6-point questions (ranging from zero to 5), generating scores ranging from zero to 20. In contrast, PSYCHLOPS Kids has a maximum score of 12: three domains ('Problem', 'Function', 'Wellbeing') each scored on 5-point questions (ranging from zero to 4). Greater severity is indicated by higher scores.

The final pre- and post-therapy versions of PSYCHLOPS Kids used in this study are presented in Figures 1 and 2, respectively.

#### *The piloting of PSYCHLOPS Kids*

Before the pilot study, schools were asked to give consent for their staff and children to take part in the pilot project. Parents were sent a letter informing them of the study and providing a consent form; verbal consent was obtained from children both about participation in dramatherapy and completion of an evaluation using PSYCHLOPS Kids.

During the two-year pilot, Roundabout dramatherapists working in mainstream schools with children aged 7-13 year (school Year 3 to Year 8) were invited to

participate and offered training in the use of PSYCHLOPS Kids. Piloting revealed that completion of PSYCHLOPS Kids as originally proposed was problematic. Pre-therapy completion difficulties arose because children lacked a personal relationship with the therapist at this stage, which could hamper completion. Post-therapy completion difficulties related to concern that the child might be inhibited from offering critical feedback to the therapy provider or might feel conflicted about the conclusion of a positively viewed process.

For these reasons, piloting resulted in an amendment to the protocol and instrument administration was conducted by existing educational staff, where possible, who were able to take a more neutral role in the process. Educational staff were trained to administer PSYCHLOPS Kids and the results reported were obtained from these staff. This also ensured that data collection was more robust.

#### *Sensitivity to change*

Mean change scores were calculated by comparing the difference between pre-therapy and post-therapy scores. Sensitivity to change was estimated using Cohen's effect size (Cohen, 1977) calculated by dividing the change score by the baseline standard deviation (SD). The value obtained represents the number of standard deviations by which the initial score has shifted between the two measurement time points.

We also conducted linear regression modelling using PSYCHLOPS Kids change scores as the outcome variable in order to identify the significant determinants of change

after completion of dramatherapy. The assumptions of regression modelling were checked for normality of residuals; Variance Inflation Factor (VIF) was determined to test for collinearity of variables and any variables with a VIF >5 were excluded.

#### *Validity and reliability testing*

Concurrent validity was tested by comparing PSYCHLOPS Kids change scores with therapist-assessed change scores, based on responses to the 6-point 'validation question' completed by the therapist post-therapy, using Pearson's *r* correlation coefficients. Concurrent validity was also tested by comparing PSYCHLOPS Kids change scores with self-assessed change scores, based on the 5-point question, 'compared to when you started therapy, how do you feel now?', again using Pearson's *r* correlations.

A sub-sample of children also had parent/carers who agreed to complete the Strengths and Difficulties Questionnaire (SDQ), the instrument routinely used in the study setting (Goodman, 2001). The SDQ is a brief behavioural screening questionnaire about 4-17 year olds. SDQ informant (4-17 years old) and self-report versions (11-17 years old) are available and the informant version was recommended for children of primary school age at the time when this study was designed. The SDQ version used had three sub-scales ('internalising problems', 'externalising problems', 'prosocial scale') with the added 'Impact' supplement, giving a total score of 86. This was used as a comparator instrument in order to derive a measure of convergent validity, comparing change scores in both instruments using Pearson's *r* correlations.

Internal reliability was tested by calculating Cronbach's alpha values for the three domains of PSYCHLOPS-Kids and the domains of SDQ.

## **Results**

### *Sample characteristics*

A total of 66 schools in London agreed to participate in the survey. Of 191 children referred for a psychological intervention using dramatherapy during the study period, 22 were outside the specified age range and were excluded as were a further 30 children who either chose not to participate in the study or to attend the first dramatherapy session. A further 7 children were excluded because change scores could not be calculated as a result of incomplete questionnaires.

The final sample with completed questionnaires consisted of 132 children (78.1% of those within the study age group), mean age 9.76 years (SD 1.38); 74% male; ethnicity: White 65.9%, Black 15.9%, Asian 7.3%, mixed 11.0%. The mean number of therapy sessions attended was 9.23 (SD 9.76; range, 1-50; median 7.0). Thirty two parent/carers completed a concurrent SDQ.

### *Sensitivity to change*

Change scores and effect sizes are summarised in Table 1. Data from the sub-sample who completed the SDQ are summarised in Table 2. The mean effect size for PSYCHLOPS Kids was 0.51 (95% confidence interval: 0.05 to 0.97) and for the SDQ was 0.39 (95% confidence interval: 0.03 to 0.74); the difference was not statistically

significant,  $t = 1.05$ ;  $P = 0.30$ . Comparing PSYCHLOPS Kids domain effect sizes with the SDQ, the Problem effect size was significantly greater ( $t = 2.06$ ;  $P = 0.04$ ); there was no significant difference in Function ( $t = -0.03$ ;  $P = 0.97$ ) or Wellbeing effect sizes ( $t = -0.93$ ;  $P = 0.36$ ).

#### *Determinants of PSYCHLOPS Kids change scores*

The final model exploring predictors of change in the total score for PSYCHLOPS Kids is shown in Table 3. All included variables had a VIF  $<5$ ; none required exclusion on the basis of collinearity. This model explained 58.3% (adjusted  $r^2$  value) of the variation in change scores. Significant predictors of change were: the PSYCHLOPS Kids pre-therapy score (higher pre-therapy scores associated with greater change in final score); self-assessment of change (higher values for self-assessment of change associated with greater measured change); age (greater change values in older children). Other variables included in the model displayed in Table 3 were not significant predictors of change.

In a subsequent sensitivity analysis, two further factors were entered into the model: how positively children reported feeling about therapy before starting the dramatherapy and again upon completion (PSYCHLOPS Kids, pre-therapy, Q6; PSYCHLOPS Kids, post-therapy, Q6). Neither variable added to the predictive power of the model and both were non-significant. Finally, although numbers were small, the SDQ pre-therapy score was added to the model but was not a significant predictor.

### *Validation and reliability testing*

The correlation coefficients obtained during validity testing are displayed in Table 4. Moderate or strong correlations were found between each of the PSYCHLOPS Kids domain scores and total scores. Self-assessment and therapist-assessment of change were not significantly correlated with any of the change scores.

Values for internal reliability testing based on Cronbach's alpha are displayed in Table 5.

## **Discussion**

### *Responsiveness to change – the 'effect size'*

We have piloted and tested PSYCHLOPS Kids for use as a client generated mental health outcome measure in children aged 7-13 years. PSYCHLOPS Kids demonstrated a 'moderate' effect size of 0.51 (Kazis, et al., 1989). PSYCHLOPS Kids appeared to show more responsiveness to change than the SDQ but wide variation resulted in lack of significant difference between the whole instrument effect sizes. Only the Problem domain of PSYCHLOPS demonstrated a significantly larger effect size than the SDQ.. As such, these values are compatible with the theory and empirical findings relating to client generated measures which, by their nature, are expected to generate larger effect sizes than standardised measures (Lacasse et al., 1999). The 'Problem' domain of PSYCHLOPS Kids demonstrated the greatest responsiveness to change (larger effect size) with 'Function' and 'Wellbeing' demonstrating smaller change values which is consistent with the theory and empirical evidence for domain effect sizes in adult PSYCHLOPS (Ashworth, et al., 2005).



### *Predictors of PSYCHLOPS Kids change*

Regression modelling demonstrated the importance of three factors as predictors of PSYCHLOPS Kids change scores in this setting of school-based dramatherapy. Higher pre-therapy scores were associated with greater recovery which mirrors similar findings for the adult PSYCHLOPS measure (Ashworth, et al., 2005). Positive PSYCHLOPS Kids change scores were seen in children who reported that they had improved following therapy indicating a degree of congruence between self-assessment and measured outcomes, again a feature noted in validation testing of adult PSYCHLOPS (Ashworth, et al., 2005). Of note, this association was only observed when the association was adjusted for demographic factors and baseline scores; on unadjusted univariate testing using correlation coefficients, self-assessment was not significantly correlated with change scores. Therapist-assessment of change was not significantly associated with measured change. Our findings suggest that client perceptions of change were more closely aligned to PSYCHLOP Kids overall change scores than therapist perceptions of change. Other studies have noted a disparity between client rated recovery and the more optimistic ratings reported by therapists (Harty & Horwitz, 1976; Macdonald & Mellor-Clark, 2015). Greater responses to therapy were also seen in older children within the study group, which may relate to the potential for imaginative play or the development of reflective skills (Weber & Haen, 2005).

### *Validity and reliability testing*

Univariate analysis of correlation coefficients revealed moderate or strong correlations between PSYCHLOPS Kids domains, although there were no significant correlations with the SDQ measure, indicating a lack of convergent validity. The lack of correlation suggests that these scales may be measuring different domains of mental health issues or the impact of different respondents completing the questionnaires and the small SDQ sample. Reports of client generated measures suggest that about 60% of clients state concerns which do not feature on comparator standardised measures, which might explain the lack of association between PSYCHLOPS Kids and SDQ scores (Ashworth, et al., 2007, Sales, et al., 2017). Previous qualitative work has suggested that school and relationship issues may be important for some children in this context and are not always captured on standard instruments (Godfrey & Haythorne, 2013). Concurrent validity was supported by the strength of relationship between change scores and self-assessment noted in regression modelling, but was not supported by therapist-assessment scores. Internal reliability was supported by strong values for Cronbach's alpha, noted in both measures.

### *Limitations of study*

This study was conducted in a routine setting in which dramatherapy was offered to schools as a way of addressing perceived psychological and behavioural difficulties in children. Many schools have access to other types of therapists such as child psychologists or counsellors. Confining our study to one type of therapy may have introduced bias. Although completion rates were higher than generally observed in studies of mental health outcome measures in adults (Evans, et al., 2003), 30 of the

initial cohort of 191 children refused permission to participate; we have no data to indicate whether this was likely to have excluded the more or the less severely affected children. The development process of PSYCHLOPS Kids was led by an expert panel rather than by a 'user group'. PSYCHLOPS Kids was developed from adult PSYCHLOPS, which had a high degree of user involvement. Although the two-year process of piloting PSYCHLOPS Kids involved informal client feedback, our methodology did not formalise client involvement in instrument development. Furthermore, development involved several stages of drafting based on the professional judgement of therapists working closely with this client group but without formal piloting of each of the eight development steps. Step by step piloting may have added to the robustness of the measure. Some authors have questioned the validity of applying conventional reliability and validity testing to client generated measures, given the lack of population normalised values in these measures (Green, 2016). However, their use in terms of providing an individualised approach to change measurement has been the most studied aspect of these instruments and some standardised instruments are developing an individualised approach to quantifying outcomes (Mellor-Clark, et al., 2014). In other words, the sharp distinction between client generated and standardised instruments appears to be narrowing.

Further limitations concern the concurrent use of the SDQ questionnaire. Other standardised comparator instruments were considered but SDQ was selected because of staff familiarity with its role in outcome measurement. Other instruments such as the Young Person's CORE would have been a useful standardised

comparator, especially as based on similar domains to PSYCHLOPS Kids, but was designed for use with older children (Twigg, et al., 2009). Our intervention was confined to administering the PSYCHLOPS Kids questionnaire although routine SDQs were not completed by all parent/carers of children completing PSYCHLOPS Kids. The resultant SDQ sample size was small, consisting of just over a quarter of those who provided PSYCHLOPS Kids data. The small sample size may have resulted in a 'type 2' error in which real differences between the instruments may not have been detected because of an under-powered comparison.

#### *Implications for practice and further work*

We have piloted and tested the first problem based, client generated outcome measure for use with children. It now needs testing in children participating in a diverse range of mental health therapy settings to ensure that validity and reliability are generalisable. Client generated measures produce qualitative data as well as quantitative scores and this has been extensively studied using adult measures (Dallos & Vitere, 2005). Further work is needed on the thematic content of the two freetext boxes which form part of the PSYCHLOPS Kids measure and which are scored in order to generate total domain scores; also on the thematic content of the three 'goal' questions. Qualitative research could also contribute to understanding the apparent disconnect between improvement seen on PSYCHLOPS Kids scores and perceived lack of improvement based on self-assessment of change.

Further work is needed on trajectories of change, which could be studied in more detail if data from several time-points were available and we have therefore

developed a during therapy PSYCHLOPS Kids version that was not available at the start of this study. Completion of during-therapy versions would also reduce data loss attributable to non-completion of the final post-therapy version of the instrument.

PSYCHLOPS Kids has the potential to broaden the evaluative framework for mental health outcome measurement by focussing measurement more directly on the issues of concern to children. It is designed to appeal to younger children and to allow for some creative expression. Its likely place as an outcome measure is to supplement existing standardised measures, providing an alternative perspective and a more sensitive measure of therapeutic improvement.

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**Ethical considerations:**

King's College London ethical approval was given for conducting this study: LRS-17/18-1761. The parents/legal guardians gave written consent for their child's responses and details to be used for research; child participation was based on assent. All data were stored in a non-identifiable format.

More details on PSYCHLOPS Kids as a client generated mental health outcome measure are available on: <http://www.psychlops.org.uk/kids.html>

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Figure 1. Copy of PSYCHLOPS Kids, pre-therapy.

## A Questionnaire about You and How You Are Feeling

Please answer all of the questions. There are no right or wrong answers. If there is something you don't understand then please ask. After this form is completed, it will be given to your therapist. We will ask you to fill in another form like this near the end of your course of therapy.

Therapy sessions give you a place to think about the things that might be difficult in your life

1. What are you most worried about in your life at the moment?

Please write in the box below (add drawings if you want to).

2. How much has it affected you over the last week?

Please tick one box below.



0

☐

Not at all



1

☐

2

☐

3

☐

4

☐

Very much

3. How long ago were you first worried about this problem?

Please tick one box below.

☐

Just this week

☐

Last term

☐

Last year

☐



Longer than that

**4. Is there something that's hard to do because of this problem?**

Please write in the box below (add drawings if you want to).

**5. How hard has it been to do this thing over the last week?**

Please tick one box below.

0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not at all hard				Very hard
				

**6. How do you feel about going to therapy?**

Please circle one of the hands below and add a word to say how you feel



**7. How have you felt this last week?**

Please tick one box below.



0

☐

Very good



1

☐

2

☐

3

☐

4

☐

Very bad

**8. If you had 3 wishes to help you what would they be?**

1)

2)

3)



Please use this space for any other comments/drawing/doodles

Thank you

Figure 2. Copy of PSYCHLOPS Kids, post-therapy.

## A Questionnaire about You and How You Are Feeling

You filled in a questionnaire before you started therapy. This is the follow up questionnaire that will help us see if anything has changed since you started therapy. Please answer all the questions below and remember there are no right or wrong answers.

1. This is what you said you were most worried about last time we asked. (teacher/SENCO/therapist write in this box)

2. How much has it affected you over the last week?

Please tick one box below.



0

☐

Not at all



1

☐

2

☐

3

☐

4

☐



Very much

3. This is what you said was hard to do because of the problem.

(teacher/SENCO/therapist write in this box)






4. How hard has it been to do this thing over the last week?

Please tick one box below.

0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not at all hard				Very hard
				

5. How have you felt this last week?

Please tick one box below.

				
0	1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very good				Very bad

**6. How do you feel about therapy now?**

Please circle one of the hands below and add a word to say how you feel



**7. Questions about you in the therapy sessions...**

a) What did you like most about therapy?

b) Was there anything you didn't like about therapy?

**8. Compared to when you started therapy, how do you feel now?**

Please tick one box below

0

☐

1

☐

2

☐

3

☐

4

☐

Much better

Much worse



Please use this space for any other comments/drawing/doodles

Thank you

Table 1: PSYCHLOPS Kids values for change scores and effect sizes, before and following completion of dramatherapy sessions (n=132).

<b>PSYCHLOPS Kids domain</b>	<b>Pre-therapy score</b>	<b>Post-therapy score</b>	<b>Change score</b>	<b>Effect size</b>
Problem; (Q2)* (range 0-4)	1.95 (1.33)	1.06 (1.13)	0.90 (1.62)	0.68 (1.22)
Function; (Q4)* (range 0-4);	1.73 (1.53)	1.17 (1.37)	0.56 (1.69)	0.37 (1.11)
Wellbeing; (Q5)* (range 0-4);	1.29 (1.28)	1.01 (1.17)	0.28 (1.56)	0.22 (1.22)
Sum of all domains (range 0-12)	4.98 (3.42)	3.24 (3.03)	1.74 (3.95)	0.51 (1.16)
Self-assessment of change; (Q8)* (range 0-4)	--	0.52 (0.91)	--	--
Therapist-assessment of change (range 0-5); ('validation question')	--	0.93 (0.96)	--	--

\*refers to Question number on post-therapy version of PSYCHLOPS Kids  
Values presented are means; standard deviation, in brackets

Table 2: Strengths and Difficulties Questionnaire (SDQ) values for change scores and effect sizes, before and following completion of drama therapy sessions (n=32).

<b>SDQ domain</b>	<b>Pre-therapy score</b>	<b>Post-therapy score</b>	<b>Change score</b>	<b>Effect size</b>
Internalising problems (range 0-20)	5.50 (4.84)	6.59 (2.53)	-1.41 (4.37)	-0.29 (0.90)
Externalising problems (range 0-20)	8.06 (4.89)	5.53 (4.42)	2.41 (3.59)	0.49 (0.73)
Sum of all Domains (range 0-40)	13.32 (8.95)	11.76 (6.05)	3.47 (6.16)	0.39 (0.69)
Impact supplement (range 0-6)	4.94 (3.40)	8.27 (7.23)	0.79 (2.33)	0.23 (0.68)

Values presented are means; standard deviation, in brackets

Table 3: Determinants of change in PSYCHLOPS Kids score based on regression modelling. Regression coefficient B and standardised coefficient Beta are displayed

Predictor variable	Coefficient B (95% CIs)	Coefficient Beta
Age	0.49 (0.09, 0.76)	0.18 **
Gender	0.26 (-0.63, 1.16)	0.04
White ethnicity	0.01 (-0.01, 0.02)	0.04
First language not English	0.00 (-0.01, 0.01)	0.01
Number of drama therapy sessions	0.00 (-0.05, 0.06)	0.01
PSYCHLOPS Kids pre-therapy score	0.84 (0.71, 0.98)	0.76 ***
PSYCHLOPS Kids, self-assessment of change	1.54 (1.04, 2.04)	0.38 ***
PSYCHLOPS Kids, therapist-assessment of change	0.26 (-0.21, 0.73)	0.07

\*indicates P<0.05; \*\*indicates P<0.01; \*\*\*indicates P<0.001



Table 4: Correlation matrix for PSYCHLOPS Kids domains and total scores. Values displayed are Pearson's r correlation coefficients

<b>Correlation domains</b>	Problem: change score	Function: change score	Wellbeing: change score	Total score: change	Self-assessment of change	Therapist-assessment of change	SDQ change
Problem: change score	--	0.54**	0.46**	0.83**	-0.14	0.03	0.13
Function: change score	0.54**	--	0.45**	0.83**	-0.06	0.12	0.17
Wellbeing: change score	0.46**	0.45**	--	0.78**	-0.06	0.08	0.06
Total score: change	0.83**	0.83**	0.78**	--	-0.11	0.09	0.15
Self-assessment of change	-0.14	-0.06	-0.06	-0.11	--	0.17*	-0.02
Therapist-assessment of change	-0.03	0.12	0.08	0.09	0.17*	--	0.04
SDQ	0.13	0.17	0.06	0.15	-0.02	0.04	--

\*indicates  $P < 0.05$ ; \*\*indicates  $P < 0.01$ ;

Table 5: Internal reliability testing for PSYCHLOPS Kids (3 domains) and SDQ (2 domains).

	Pre-therapy, Cronbach's alpha (95% CI)	Post-therapy, Cronbach's alpha (95% CI)
PSYCHLOPS Kids	0.77 (0.69, 0.83)	0.76 (0.68, 0.82)
SDQ	0.77 (0.38, 0.91)	0.34 (-0.82, 0.76)